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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,884	02/27/2002	Manoharprasad K. Rao	201-0939 FAM	7808

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EXAMINER

GIBSON, ERIC M

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/683,884	Applicant(s) RAO ET AL.	
	Examiner Eric M Gibson	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/22/2004 has been entered.**

**It is noted that the amendment was incomplete with respect to claims 18-21. The listing of claims stopped at page 4, mid-way through claim 17. Therefore, claims 17-21 will be evaluated as previously presented in the last amendment that fully included those claims.

Claim Objections

2. Claim 18 is objected to because of the following informalities:

After claim 18 and before claim 19, there is an "a" listed on the left-hand side of the paper. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7 and 9-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breed (US006209909B1) in view of Eibert et al. (US005621807A).

a. As per claim 1, Breed teaches a system for sensing that an airbag should be deployed prior to the start of the impact including an object sensor generating an object signal (column 8, lines 52-55), object distance, position and relative velocity signals (column 10, lines 65-67), an object classifier (neural computer 145, figure 1A) generating an object classification signal corresponding to a type of second vehicle (column 8, lines 58-64), and a controller activating the countermeasure in response to the sensed signals (column 9, lines 3-8). Breed does not teach detecting the orientation of the second vehicle detected by the object classifier. Eibert teaches an imaging sensor for classifying and determining the position and orientation of remote objects for use in applications involving computer vision systems, such as that taught in Breed. Specifically, Eibert teaches that along with generating an object classification signal, the

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object classifier also identifies the position and spatial orientation or attitude of the object (column 1, lines 45-63). It would have been obvious to one of ordinary skill in the art, at the time of invention, to take into account the object orientation in the vision system of Breed, as taught by Eibert, in order to more accurately identify the object.

b. As per claim 2, Breed teaches that the invention is possible to be implemented using a vision system (column 10, lines 8-17).

c. As per claim 3, Breed teaches that the pattern recognition uses such information as form or shape, size or weight and breadth among others (column 8, lines 49-52).

d. As per claim 4, Breed teaches a radar system as the preferred implementation (column 8, lines 9-14).

e. As per claims 5-7, Breed teaches that the pattern recognition uses such information as form or shape, size or weight and breadth among others (column 8, lines 49-52).

f. As per claim 9, Breed teaches a system for sensing that an airbag should be deployed prior to the start of the impact including an object sensor generating an object signal (column 8, lines 52-55), object distance, position and relative velocity signals (column 10, lines 65-67), an object classifier (neural computer 145, figure 1A) generating an object classification signal corresponding to a type of second vehicle (column 8, lines 58-64), and a controller activating a first or second countermeasure (column 4, lines 48-56) in response to the sensed signals (column 9, lines 3-8). activating the countermeasure in response to the sensed signals (column 9, lines 3-8).

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Breed does not teach detecting the orientation of the second vehicle detected by the object classifier. Eibert teaches an imaging sensor for classifying and determining the position and orientation of remote objects for use in applications involving computer vision systems, such as that taught in Breed. Specifically, Eibert teaches that along with generating an object classification signal, the object classifier also identifies the position and spatial orientation or attitude of the object (column 1, lines 45-63). It would have been obvious to one of ordinary skill in the art, at the time of invention, to take into account the object orientation in the vision system of Breed, as taught by Eibert, in order to more accurately identify the object.

g. As per claim 12, Breed teaches determining an object class (column 11, lines 26-32).

h. As per claim 13, Breed teaches a method for sensing that an airbag should be deployed prior to the start of the impact including establishing a detection zone (see figures 1 and 2), an object sensor determining an object signal (column 8, lines 52-55), object distance, position and relative velocity signals (column 10, lines 65-67), an object classifier (neural computer 145, figure 1A) determining an object classification signal corresponding to a type of second vehicle (column 8, lines 58-64), and a controller activating the countermeasure in response to the sensed signals (column 9, lines 3-8). activating the countermeasure in response to the sensed signals (column 9, lines 3-8). Breed does not teach detecting the orientation of the second vehicle detected by the object classifier. Eibert teaches an imaging sensor for classifying and determining the position and orientation of remote objects for use in

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applications involving computer vision systems, such as that taught in Breed.

Specifically, Eibert teaches that along with generating an object classification signal, the object classifier also identifies the position and spatial orientation or attitude of the object (column 1, lines 45-63). It would have been obvious to one of ordinary skill in the art, at the time of invention, to take into account the object orientation in the vision system of Breed, as taught by Eibert, in order to more accurately identify the object.

i. As per claims 14-17, Breed teaches that the pattern recognition uses such information as form or shape, size or weight and breadth among others (column 8, lines 49-52).

j. As per claim 18, Breed teaches using a radar and vision system together to perform the method of the invention (column 10, lines 8-17).

k. As per claim 19, Breed teaches activating first or second or both countermeasures in response to the severity of the accident (column 11, lines 58-67), determined by taking into account the object classification signal.

l. As per claim 20, Breed teaches that the second vehicle orientation is taken into account in the system (column 10, lines 66-67).

m. As per claim 21, Breed teaches determining an object class (column 11, lines 26-32) and a second vehicle orientation is taken into account in the system (column 10, lines 66-67).

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Breed and Eibert and further in view of Foo et al. (US006036225A).

a. As per claim 8, the combination teaches the invention as explained in the rejection of claim 1. Breed teaches that the relative vehicle velocity is taken into account in the system, but does not teach actuating either a first or second countermeasure in dependence on the vehicle speed. Foo teaches a conventional restraint system wherein the actuation of a first or second countermeasure is determined based on the velocity exceeding a first and second threshold value (column 2, lines 40-51), in order to provide protection to the occupant in proportion to the severity of the crash. It would have been obvious to one of ordinary skill in the art, at the time of invention, to include vehicle velocity dependent actuation of a first or second countermeasure in the system of the combination, in order to take into account the severity of the crash, as taught by Foo.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M Gibson whose telephone number is (703) 306-4545. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on (703) 308-3873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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